

Obstructive Sleep Apnea: Fabrication of an Implant-Retained Mandibular Advancement Splint

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Problem

Obstructive sleep apnea (OSA) affects millions of people. OSA patients stop breathing repeatedly during sleep which leads to hypoxia of the brain. Mandibular advancement splints (MAS) may enforce normal breathing. However, for edentulous patients, these splints cannot be fixed properly and the treatment effect is poor.

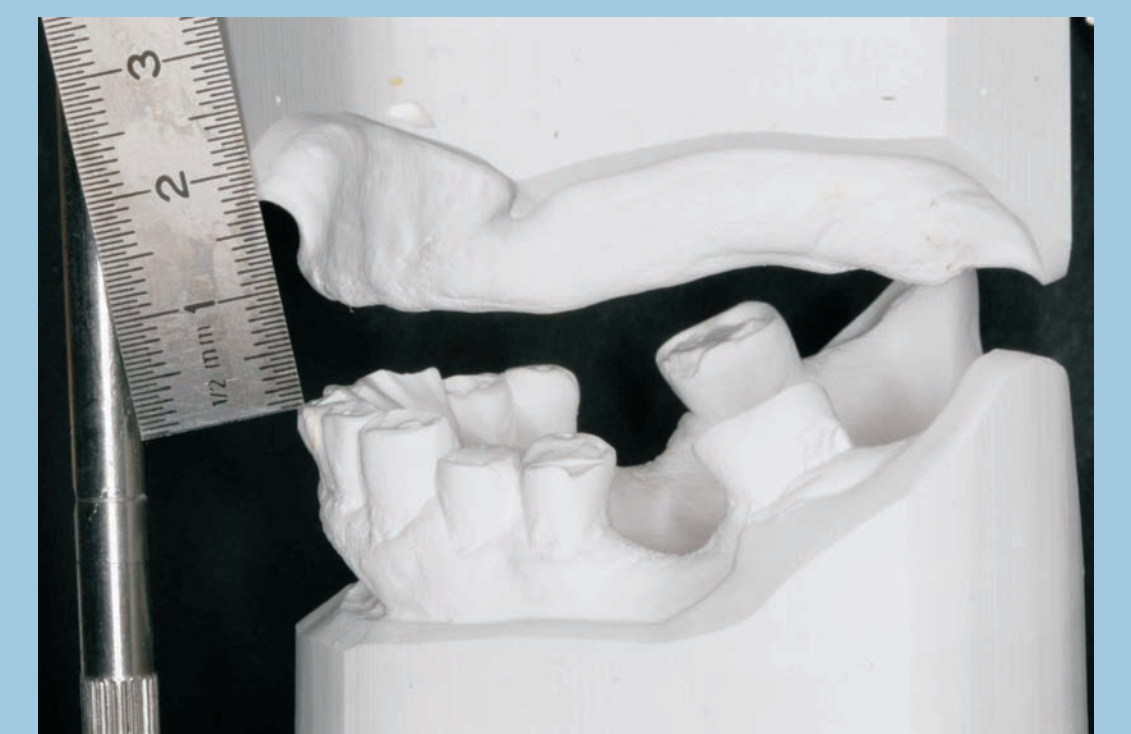


Objective

Improvement of retention and stability of a MAS with fixation on implants in the edentulous maxilla.

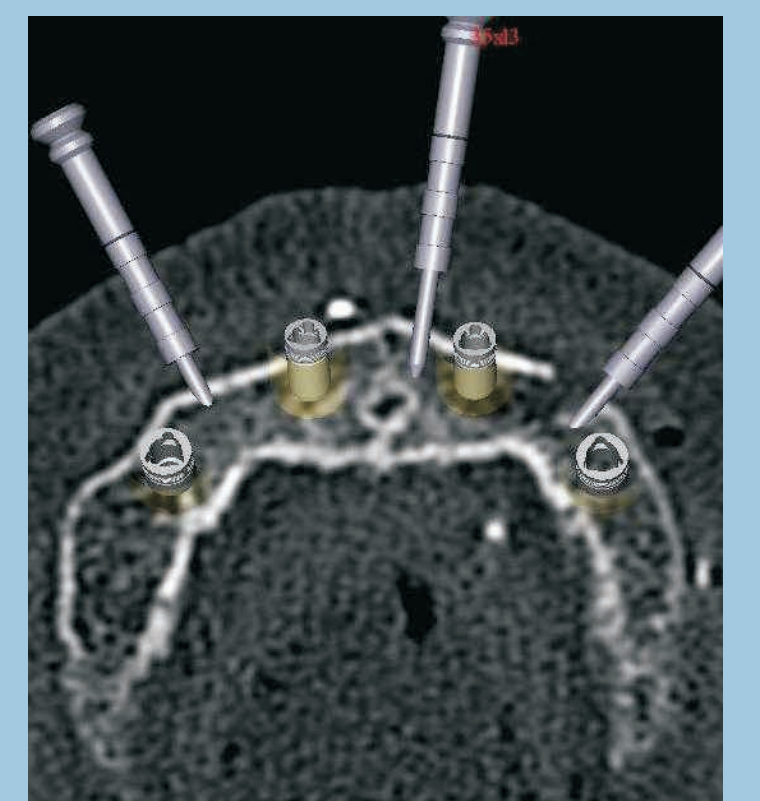
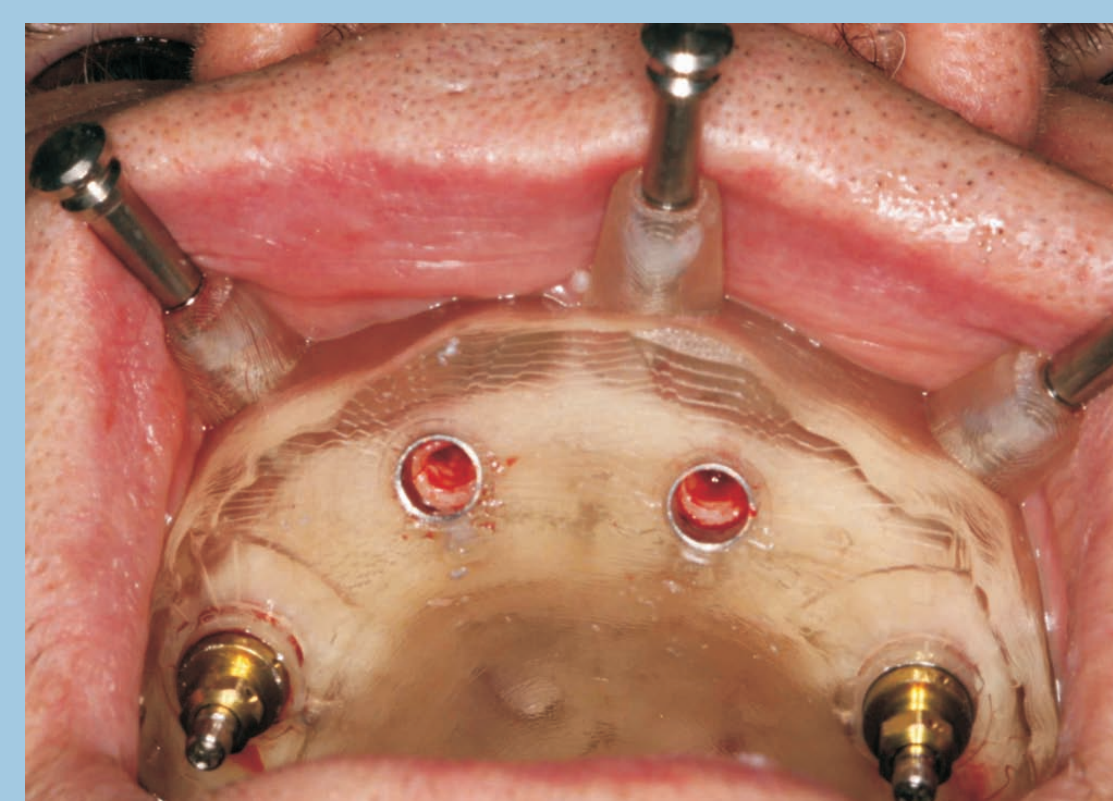
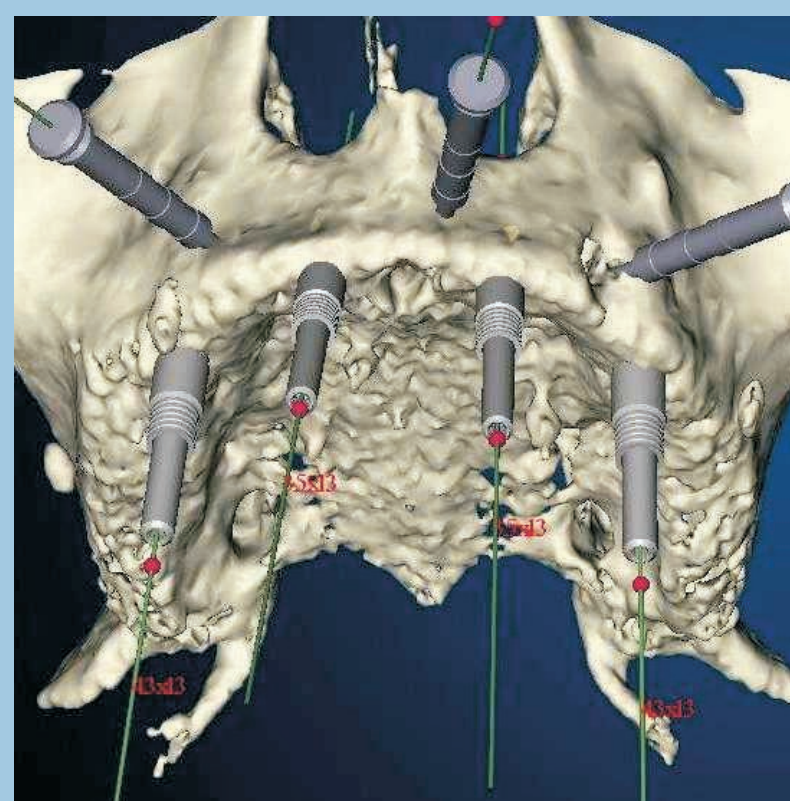
Clinical Examination

The 78 years old OSA patient with a completely edentulous maxilla complained about instability, discomfort, and pain when wearing his MAS.



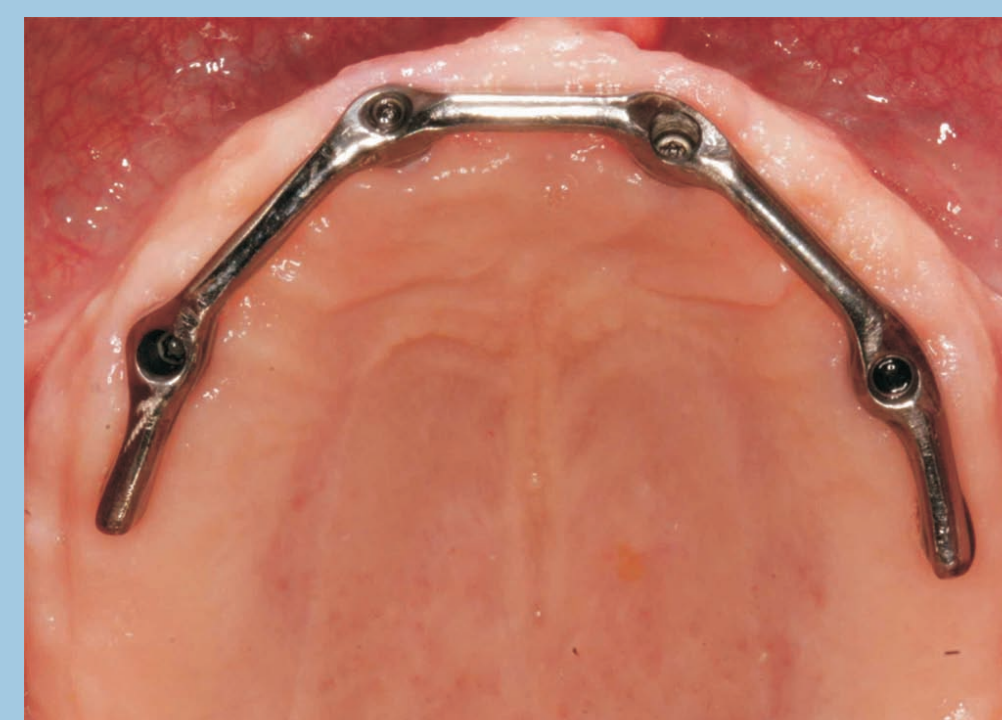
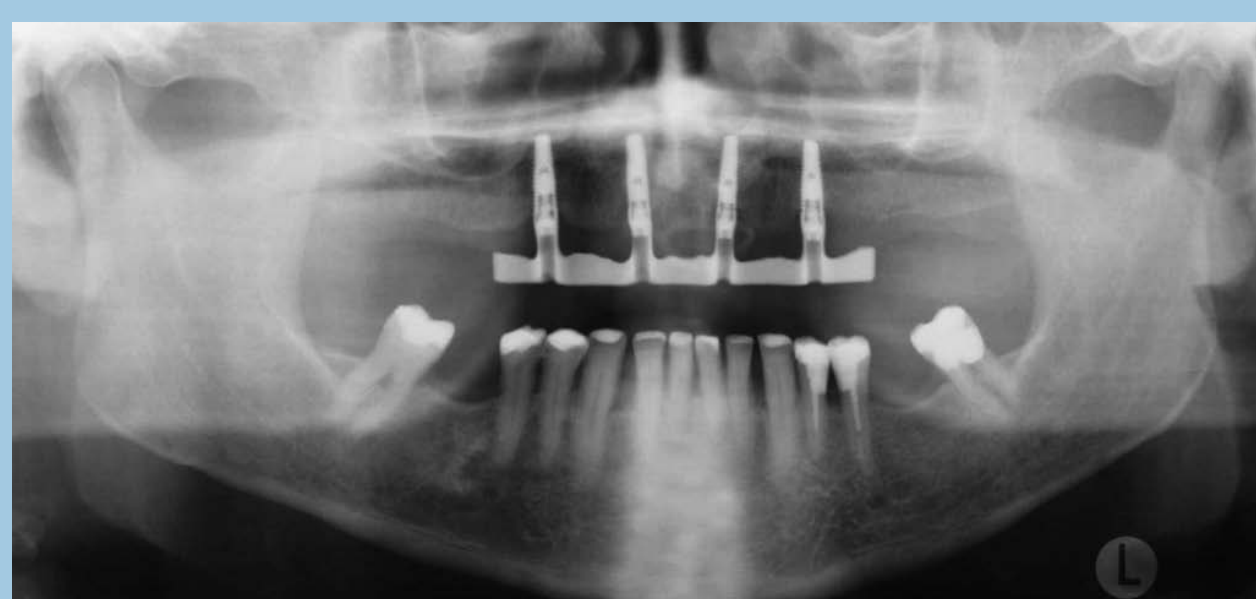
Computer Guided Implant Planning and Surgery

The treatment goals were 4 maxillary implants with a connection bar for anchorage of a new overdenture and a MAS during the night. The implants were planned virtually and placed with a flapless procedure.



Bar Overdenture and MAS

A titanium bar with distal extensions was fabricated by CAD CAM technology. Stable anchorage for the overdenture and the MAS was achieved.



Conclusions

Beside the bar retention, the MAS was locked in the tooth gap of the missing mandibular molars. This prevents drop back of the mandible and collaps of the soft tissue.



The presented solution met the patient's demands, fulfilled his expectations and resolved the sleep apnea.